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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,410	05/21/2001	Huai-Rong Shao	MS1-754US	8900

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EXAMINER	
EL HADY, NABIL M	
ART UNIT	**PAPER NUMBER**
2152	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/862,410	SHAO ET AL.	
	Examiner	Art Unit	
	Nabil M. El-Hady	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-32 are pending in this application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-32 are rejected under 35 U.S.C. 102(e)/103(a) as being anticipated by /unpatentable over Aharoni et al. (US 6,014,694), hereafter "Aharoni ".

4. Aharoni is cited by the examiner in a previous office action.

5. As to claim 1, Aharoni discloses the invention as claimed including a method comprising; compressing video objects (col. 2,lines 15-16; and 14, 16, Fig. 1); generating at least one corresponding elementary stream comprising the compressed video objects (col. 2, lines 29-35; and Fig. 4); classifying information within each elementary stream based on importance (col. 2, lines 29-31; and col. 9, lines 57-62) and responsive to the compressed video objects (col. 9, lines 57-62); and assembling the classified information into packets associated with different classes of network packets (col. 2, lines 56-62; and col. 7, line 67 to col. 8, line 1).

6. Aharoni's disclosure talks about raw video and data objects in several places . However, Aharoni discloses that any suitable method of video compression can be utilized to process the raw video data such as described in connection with MPEG-1, MPEG-2, or MPEG-4 standards (col. 6, lines 56-59; and col. 18, lines 39-42). It is well known in the art that MPEG-4 standards is object-based (e.g. "MPEG4 Video Verification Model" reference is cited by the applicant in

the parent application 09/464,671). This basically means that Aharoni's raw data are video objects and Aharoni's data objects are video objects.

7. As to claim 2, Aharoni does not explicitly spell out the video data as shape, motion, and texture information. However, Aharoni discloses assigning different priority levels for multiple types of frames comprised of video data which may include shape, motion, and texture information (col. 9, lines 57-62).

8. As to claim 3, Aharoni does not explicitly disclose selectively multiplexing a plurality of the network packets with the same priority level into an application level packet. However, it would have been obvious to one skilled in the art at the time of the invention that a client would receive a subset of the levels chosen to have suitable data content to match that of the network connection or the client by multiplexing a prioritized video data stream comprising multiple levels (col. 2, lines 28-35).

9. As to claim 4, Aharoni does not explicitly disclose arranging the content of at least one of the network packets in an interleaving fashion. However, it is well known in the art, and would have been obvious to one skilled in the art at the time of the invention that arranging the contents of the packet in an interleaving fashion would speed up the packet assembly and would as a result enhance the fast transcoding process.

10. As to claim 5, Aharoni discloses the different classes of network packets are associated with a network that provides differentiated services (Diff- Serv) such that an adaptive transmission environment is implemented for multimedia communications using scalable coding

technology using the differentiation capabilities within at least one network session (col. 2, lines 10-12,44-46; and col. 7, lines 35-42).

11. As to claim 6, the claim is rejected for the same reasons as claim 1 above. In addition, Aharoni discloses a method comprising: packetizing content information (col. 7, lines 60-62); generating resource coordination information based at least in part on at least one prioritizing parameter associated with an application communicating the content information (col. 8, lines 2-23); selectively associating each packet of content information with a service class selected from among at least two different service classes based on the resource coordination information (col. 8, lines 2-23; and col. 9, lines 57-62); implementing rate control based on minimizing quality degradation responsive to a video quality weighting factor, a packet loss rate, and respective bit rates of responsive service classes (col. 12, lines 42-55; and col. 17, lines 51-66); selectively outputting at least one packet of content information based on a priority associated with the service class associated with the packet of content information (col. 8, lines 2-23; and col. 9, lines 57-62) and responsive to the implemented rate control (col. 17, lines 51-66); and providing the at least one packet of content information to a network (col. 8, lines 6-7).

12. Aharoni does not specifically disclose minimizing quality degradation responsive to a video quality weighting factor. However, it is well known and expected in the art that a rate control of video stream may be based on minimizing quality degradation responsive to a variety of parameters including a video quality weighting factor (e.g. van der Schaar el al., US 6,788,740) .

13. As to claim 7, Aharoni discloses generating the resource coordination information based at least in part on at least one prioritizing parameter associated with at least one remote device that is operatively coupled to the network (22, Fig. 1; and col. 8, lines 2-23).

14. As to claim 8, Aharoni discloses generating the resource coordination information based at least in part on at least one prioritizing parameter associated with a monitored performance of the network (col. 8, lines 2-23).

15. As to claim 12, the claim is rejected for the same reasons as claim 6 above. In addition, a computer-readable media comprising computer instructions for performing acts comprising: generating prioritization information based at least in part on at least one parameter associated with an application streaming media information; associating packets of the media information with a service class selected from a plurality of different service classes based on the prioritization information; and selectively outputting some of the packets of media information based on their respective service class priority levels, is inherent in Aharoni's disclosure. Moreover, Aharoni discloses selectively discarding a portion of the packets of the media information in accordance with an adaptive rate control mechanism at a sending computing device (col. 3, lines 46-60; and col. 12, lines 42-55).

16. As to claim 14, the claim is rejected for the same reasons as claims 1 and 6 above. In addition, Aharoni discloses an apparatus comprising: logic configured to process content information output by an application layer process and provide resulting processed content information to a network layer process (inherent in the communication between 12, 14, 16, 18, and 20, Fig. 1), the logic implementing at least one protocol layer process configured to

packetize the content information (col. 8, lines 2-7; col. 7, lines 39-42; and col. 8, lines 56-63), a queuing layer process configured to prioritize the packetized content information in accordance with different priorities within a single secession (col. 9, lines 56-60), and a scheduling layer process configured to selectively provide the prioritized packetized content information to the network layer process based on at least one quality of service parameter (col. 8, lines 18-23).

17. As to claim 19, the claim is rejected for the same reasons as claims 1, 6, and 14 above. In addition, Aharoni discloses an apparatus comprising: packetizer logic configured to receive encoded content information and output corresponding packets of content information (col. 7, line 67 to col. 8, line 17; and Fig. 2); collaborator logic operatively coupled to the packetizer logic and configured to receive at least one prioritizing parameter associated with at least one application, including an application communicating the content information (18, Fig. 2) and one or more prioritizing parameters associated with a user interaction (col. 7, line 62 to col. 8, line 16; and col. 19, lines 15-21) and output resource coordination information associated based at least in part on the at least one prioritizing parameter associated with the application (col. 8, lines 2-23; and Fig. 2) ; priority mapping logic operatively coupled to the collaborator logic and configured to receive the packetized content information and the resource coordination information, and selectively associate each received packet of content information with a service class selected from among at least two different service classes based on the resource coordination information, and selectively output at least one packet of content information based on a priority associated with each service class (col. 8, lines 2-23; Fig. 2; and col. 9, lines 57-62) ; and forwarder logic operatively coupled to the priority mapping logic and configurable to provide the at least one packet of content information to a network (col. 8, lines 6-7; and Fig. 2).

18. As to claims 9,10, 22, and 23, Aharoni discloses encoding initial content information as the encoded content information, and segmenting raw video data into a plurality of video objects and wherein at least one of the video objects is included in the initial content information (col. 2, lines 56-59; and col. 7, lines 49-51).

19. As to claim 15, Aharoni discloses the queuing layer process is configured to provide a plurality of priority class queues arranged to queue the packetized content information (Fig. 15).

20. As to claim 16, Aharoni discloses an application-aware quality of service control layer process and a packet mapping layer process configured to operatively provide quality of service differentiation of the content information within a flow of content information from the application layer process (col. 8, lines 2-23; Fig. 2; and col. 9, lines 57-62).

21. As to claim 17, Aharoni discloses the protocol layer process operatively includes at least one protocol selected from a group of protocols including TCP, UDP, and IP (col. 2, lines 10-15).

22. As to claim 20, Aharoni discloses the collaborator logic is further configurable to receive at least one prioritizing parameter associated with at least one remote device that is operatively coupled to the network (22, Fig. 1; and col. 8, lines 2-23), and output the resource coordination information based at least in part on the at least one prioritizing parameter associated with the remote device (col. 8, lines 2-23).

23. As to claim 21, Aharoni discloses network monitoring logic operatively coupled to the collaborator logic and configurable for use with the network and in monitoring network performance, and to output at least one prioritizing parameter associated with the network performance (col. 2, lines 56-63; and col. 13, lines 11-13), and the collaborator logic is further configured to receive the at least one prioritizing parameter associated with the network, and output the resource coordination information based at least in part on the at least one prioritizing parameter associated with the network (col. 8, lines 2-23; and Fig. 2).

24. As to claim 25, the claim is rejected for the same reasons as claims q, 6, 14, and 19 above. In addition, Aharoni discloses a system comprising: a network environment (Fig. 15) including a backbone network (218, Fig. 15), and a first access network (216, Fig. 15) and a second access network (220, Fig. 15; and col. 18, lines 15-16) each being operatively coupled to the backbone network; a plurality of host devices including a first host device operatively coupled to the first access network (218, Fig. 15) and a second host device operatively coupled to the second access network (220, Fig. 15); an application-aware resource controllers (222, Fig. 15).

25. Aharoni discloses one application-aware resource controller (222, Fig. 15) which function to determine and control the bandwidth for a particular network connection (col. 21, lines 34-36).It would have been obvious to one skilled in the art at the time of the invention to utilize a plurality of these application-aware resource controller in the system in order to cover more than network connections.

26. As to claim 26, Aharoni discloses at least the first application-aware resource controller is configured to selectively adapt a flow rate associated with the content information based on an identified network state (222, Fig. 15).

27. As to claim 27, Aharoni discloses at least the first application-aware resource controller is configured to selectively adapt a flow rate to associated with the content information based on at least one identified first device user requirement (col. 7, lines 7-15; and col. 8, lines 8-17).

28. As to claim 28, Aharoni discloses at least the first application-aware resource controller is configured to controllably handle the content information per application-based signaling, and to operatively associate a priority with the at least one service class (col. 8, lines 8-23; and col. 9, lines 57-62).

29. As to claim 29, Aharoni discloses associating a priority with the at least one service class (col. 2, lines 29-31, 56-62; col. 7, line 67 to col. 8, line 1; and col. 9, lines 57-62).

30. As to claims 30 and 32, Aharoni discloses at least one processing agent operatively configured within the network environment and configured to selectively filter content information associated with different communication sessions based on identified bandwidth constraints and service classes, and implement packet-level fast transcoding and related signaling (col. 10, lines 33-48; and col. 11, lines 53-56).

31. As to claims 11, 13, 18, 24, and 31, Aharoni discloses the content information includes data representing media information selected from a group comprising video information, audio

information, image information, and textual information (col. 1, lines 12-17; and col. 2, lines 15-16).

32. Applicant's arguments filed 3/4/2005 have been fully considered but they are not persuasive. Therefore, rejection of claims 1-32 is maintained.

33. In the remarks, applicants argued in substance that (1), the video compression of Aharoni is not effectuated using video objects, (2), Aharoni neither describes nor suggests use of a video quality weighting factor and/or minimizing quality degradation, (3), Aharoni neither describes nor suggests discarding packets at the sender, (4), no art in record, either alone or in any combination, anticipates or renders obvious a queuing layer process configured to prioritize the packetized content information in accordance with different priorities within a single session, (5) Aharoni neither describes nor suggests prioritization resulting from user interaction feedback, (6), Aharoni neither describes nor suggests any application-aware resource controller.

34. Examiner respectfully traverses applicants' remarks.

35. As to point (1), Aharoni's disclosure talks about raw video and data objects in several places . However, Aharoni discloses that any suitable method of video compression can be utilized to process the raw video data such as described in connection with MPEG-1, MPEG-2, or MPEG-4 standards (col. 6, lines 56-59; and col. 18, lines 39-42). It is well known in the art that MPEG-4 standards is object-based. The "MPEG4 Video Verification Model" reference is cited for that reason. This basically means that Aharoni's raw data are video objects and

Aharoni's data objects are video objects. It is also noted that compressing video objects and creating a stream of compressed video objects is well known in the art within the environment of adaptive transmission of video stream (e.g., Wu et al., cited by the applicant in the parent application 09/464,671, and Maeda, US 6,512,793).

36. As to point (2), Aharoni discloses implementing rate control based on minimizing quality degradation responsive to a packet loss rate, and respective bit rates of responsive service classes (col. 12, lines 42-55; and col. 17, lines 51-66). It is well known and expected in the art that a rate control of video stream may be based on minimizing quality degradation responsive to a variety of parameters including a video quality weighting factor (e.g. van der Schaar el al., US 6,788,740), a packet loss rate, and respective bit rates (e.g. Boroczky et al., US 6,859,496).

37. As to point (3), Aharoni describes discarding packets at the sender (col. 12, lines 42-55).

38. As to claim (4), Aharoni discloses a queuing layer process configured to prioritize the packetized content information in accordance with different priorities within a single session (col. 9, lines 56-61).

39. As to point (5), Aharoni discloses prioritization resulting from user interaction feedback (col. 7, line 60 to col. 8, line 17; and col. 19, lines 15-21).

40. As to point 6, Aharoni discloses one application-aware resource controller (222, Fig. 15) which function to determine and control the bandwidth for a particular network connection (col. 21, lines 34-36). However, it would have been obvious to one skilled in the art at the time of the

invention to utilize a plurality of these application-aware resource controller in the system in order to cover more than network connections.

41. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nabil M El-Hady whose telephone number is (571) 272-3963. The examiner can normally be reached on 9:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 6, 2004

Nabil El-Hady, Ph.D, M.B.A.
Primary Patent Examiner
Art Unit 2154